AQUA LUNG

Survival Egress Air (SEA) User's Manual

Rev. 12/10

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SEA Owner's Manual
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Warnings, Cautions and Notes:

Pay special attention to information provided

A WARNING indicates a procedure or situation that, if not avoided, could result in serious injury or death to the user.

A CAUTION indicates any situation or technique that could cause damage to the product, and could subsequently result in injury to the user.

*A **NOTE** is used to emphasize important points, tips, and reminders.*

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Product Description

The SEA MK and SEA LV2 consist of the basic SEA first stage and cylinder assembly. The products differ in second stage configurations and color of first stage components as listed below:

SEA MK

- SEA Piston First Stage with integral fill port and choice of pin or dial indicator gauge. Some bright chrome components used on the hose and swivel assemblies.
- Standard ¼ I.D. Low Pressure Hose in 20 and 27 inch lengths. Bright Chrome fittings.
- Military Black MK Second Stage Assembly.
- Standard cylinders are 3000 psi, 1.5 cu.ft. or 2.0 cu.ft

SEA LV2

- SEA Piston First Stage with integral fill port and choice of pin or dial indicator gauge. All Black Chrome components utilized on first and second stage components for low reflective signature (Burst Plug is Chrome).
- Flexible 3/16 I.D., Low Profile, Low Pressure Hose in 20 and 27 inch lengths. Black Chrome fittings for low reflective signature.
- Ergonomic Low Volume Second Stage with indexable mouthpiece allowing for variable regulator orientation without use of complex swivel devices.
- Standard cylinders are 3000 psi, 1.5 cu.ft. or 2.0 cu.ft

General Precautions & Warnings

The SEA is intended for use only as an emergency device to assist a crewmember or passenger in making an emergency egress from a submerged aircraft. Due to its limited air volume, it is not intended for use while scuba diving, or egressing from depths greater than 45 ft/ 13.5 m.

Before using the SEA, it is important to receive in-water survival training which simulates an emergency egress situation. You must also learn basic principals and techniques for breathing compressed air underwater. Use of the SEA without proper training is dangerous and can result in serious injury or death.

Visual inspection and factory prescribed service for the SEA must be performed at least once every two years by a factory trained and qualified service technician. Repair, service, and visual inspection must not be attempted by untrained or unqualified personnel.

DO NOT attempt to overfill the SEA beyond 3,000 PSI/ 206 BAR at 70ºF/ 21ºC. Doing so may seriously weaken the cylinder and cause it to rupture, resulting in serious injury or death.

DO NOT fill or use the SEA if it has been exposed to extreme heat exceeding 250°F / 121ºC, or open flame. Instead, discharge the cylinder completely and return it to a qualified technician for inspection and possible hydrostatic testing.

The SEA is designated compatible for use only with normal, atmospheric, compressed air (21% oxygen and 79% nitrogen by volume). DO NOT attempt to fill with other gases, including pure oxygen, or air which has been enriched with oxygen exceeding 21% in content. Failure to observe this warning may result in serious injury or death due to fire and explosion, or the serious deterioration and failure of the equipment.

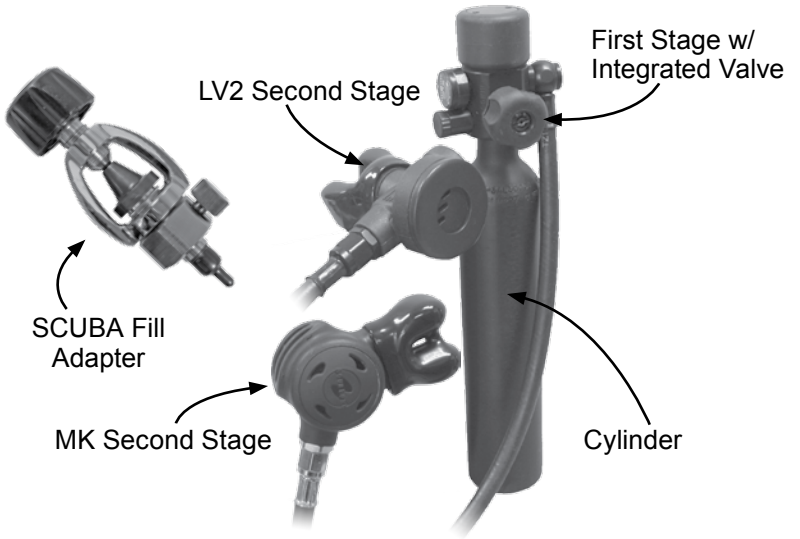
DO NOT apply any type of petroleum-based lubricant, such as household oil or motor oil to any part of the SEA. The SEA does not require any lubrication under normal circumstances, except that which is performed during annual inspection and service by a factory trained service technician.

DO NOT apply any type of aerosol spray to the SEA. Doing so may cause permanent damage to certain plastic components, including the second stage housing.

During training exercises, it is important to ensure that the SEA is always pressurized whenever it is submerged in order to prevent the entrance of water into the system. Whenever the system has been completely emptied of air underwater, it is important to return the SEA as soon as possible to a qualified technician for visual inspection and any necessary service before attempting to refill it.

It is important to fill the SEA only with dry, filtered air with a water vapor content that does not exceed -65°F / -53ºC dewpoint. Excess water vapor in the air can cause ice to form inside the SEA and interfere with the operation of the system at colder temperatures.

Component Identification



Preparation and Setup

The purpose of this manual is to familiarize you with the correct setup, filling, inspection and maintenance of the SEA.

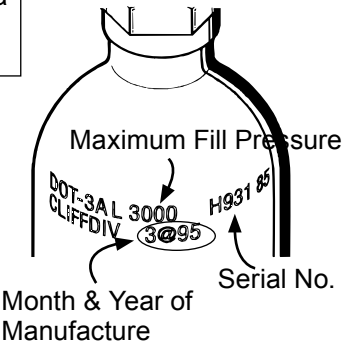
The SEA is packaged fully assembled and ready to use after it has been filled with air. Before using it, however, it is very important to carefully read and understand the procedures outlined in this manual for filling the unit and performing a preflight inspection.

General Filling Procedures

☞ ***NOTE**: The average duration of air supply listed on page 25 of this manual is based on a completely full SEA cylinder, filled to 3,000 PSI / 206 BAR with a volume of 2.0 cubic ft / 42.5 liters of air. It is strongly recommended that the SEA be filled to 3,000 PSI / 206 BAR (cold fill), in order to provide maximum breath volume.*

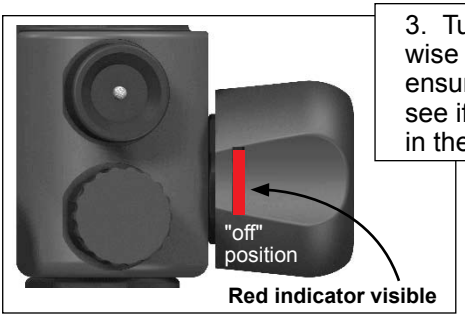
1. Before attempting to fill the SEA, ensure that the fill adapter and first stage are completely dry – especially in the area surrounding the high pressure port.

2. Examine the cylinder markings to verify that it is rated for a fill pressure of 3,000 PSI / 206 BAR.



WARNING: DO NOT attempt to fill the SEA if the cylinder markings indicate that it is assembled with a non standard cylinder rated for a different fill pressure than 3,000 PSI/ 206 BAR. Doing so may result in rupture or explosion in the event of fire or overfilling. Instead, immediately return the unit to a qualified technician and do not use under any circumstances.

3. Turn the valve handwheel clockwise until it is completely closed. To ensure the valve is closed, check to see if the red indicator ring is visible in the handwheel.



4. Depress the second stage purge button to ensure that the system is completely depressurized.

5. Unscrew the fill adapter plug from the fill adapter port.

6. Closely inspect the port opening to ensure that no debris, residue or moisture is present.

CAUTION: If moisture is found to be present inside the port opening, indicating that water may have entered the SEA first stage and cylinder, DO NOT fill or attempt to use the SEA until it has received complete inspection and any required service by a qualified technician.

WARNING: DO NOT attempt to loosen or remove the first stage hose fitting or safety burst plug under any circumstances. Doing so could result in a dangerous malfunction of the SEA which could result in serious injury or death.

Filling the SEA From a SCUBA Cylinder

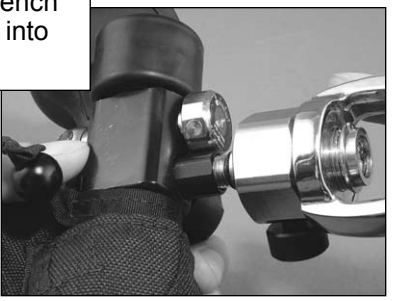
***NOTE**: The SEA system does not include a SCUBA fill adapter. This adapter (P/N 108325) may be purchased separately (refer to Component Identification, p. 6).*

CAUTION: The dial indicator is for reference only. Use fill system gauge as indicator of fill pressure.

1. Using a calibrated pressure gauge, check the supply cylinder to ensure that it contains at least 2,700 PSI/ 186 BAR and less than 3,100 PSI / 214 BAR. It is very important to ensure that the SEA is filled to its total capacity but not overfilled.

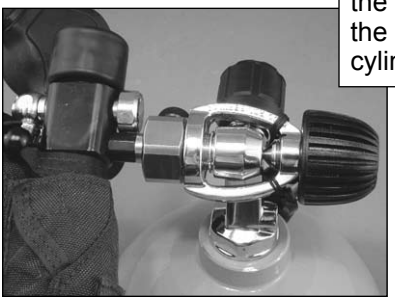
2. Remove the protector cap from the threaded nozzle of the fill adapter. Inspect the nozzle to ensure the o-ring is present and seated evenly at the base of the threads.

3. Mate the threaded nozzle of the fill adapter into the open fill port, and turn clockwise by hand until snug. DO NOT apply a wrench or otherwise overtighten the fill adapter into the first stage.



4. Loosen the fill adapter yoke screw as needed so that the dust cap can be removed from the inlet fitting and the yoke can be placed over the valve of the supply cylinder.

5. While supporting the SEA with one hand, place the yoke of the fill adapter over the cylinder valve to align the inlet fitting flush against the valve o-ring. Tighten the fill adapter yoke screw clockwise into the small dimple on the backside of the cylinder valve only until finger snug.

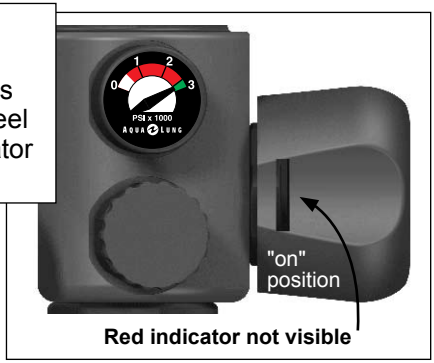


WARNING: DO NOT attempt to fill the SEA from a supply cylinder which contains more than 3,100 PSI / 214 BAR. Doing so may weaken and damage the safety burst plug assembly and/ or SEA cylinder.

***NOTE**: Part Numbers 108382 & 108545 do not have an on/ off valve; therefore, the pressure indicator gauge and second stage are always active when the cylinder is pressurized.*

***NOTE**: The SEA may be filled with the valve handwheel in the completely closed position (red indicator ring visible). In this position the pressure indicator (pin or dial) will not register psi. This is not recommended.*

6. While holding the first stage and fill adapter secure, turn the valve handwheel counterclockwise until it is completely open. When the handwheel is in the open position, the red indicator ring is not visible.



Red indicator not visible

7. Support the cylinder with one hand, and slowly turn the supply cylinder valve handwheel counterclockwise to open and begin filling. As the SEA cylinder begins to fill, make sure the pressure indicator (pin or dial) shows that the cylinder is filling properly.

***NOTE**: Always fill the cylinder as slowly as possible by turning the handwheel of the supply valve slowly to control the rate of fill. Rapid filling will generate heat and will result in an incomplete fill after the cylinder cools. If the cylinder is warm to the touch afterward, the fill rate was too rapid.*

CAUTION: The dial indicator is for reference only. Use fill system gauge as indicator of fill pressure.

8. When at least two minutes have elapsed, and air can no longer be heard flowing from the supply cylinder into the SEA, turn the supply cylinder valve completely open.

9. To conserve the limited air supply of the SEA, it is strongly recommended that you perform a pre-issue inspection of the second stage purge while it is connected to the supply cylinder as follows:

   a. Depress the purge button to ensure that sufficient airflow is provided to clear the second stage of water.

   b. Immediately after releasing the purge button, listen closely to ensure that the second stage does not continue to flow any air.

10. While holding the first stage and fill adapter secure, turn the SEA valve handwheel clockwise until it stops and the red indicator is visible. Turn the handwheel of the supply cylinder valve clockwise until shut.

11. Hold the second stage purge button depressed until airflow can no longer be heard from the second stage and the LP hose between the first and second stages is completely depressurized (N/A to PN 108382 & 108545).

12. Open the pressure relief screw on the fill adapter to relieve the line pressure.

13. While supporting the SEA cylinder with one hand, turn the yoke screw of the fill adapter counterclockwise to loosen until the complete system can be lifted off and removed from the supply cylinder valve.

14. While holding the SEA secure, turn the fill adapter counterclockwise at the fitting to loosen and remove from the first stage. Replace the dust cap over the inlet fitting, and tighten the yoke screw finger tight.

15. Thread the fill port plug into the fill port until finger tight.

Filling the SEA with a Compressor Fill Adapter

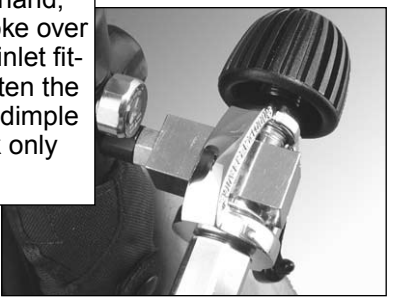
***NOTE**: The Compressor Fill Adapter (P/N 100656) is not included with SEA and must be purchased separately.*

CAUTION: Do not attempt to fill the SEA directly from a compressed air filling station unless you have received the necessary training and authorization to do so. If done incorrectly, this procedure poses certain hazards which may cause severe injury or death.

***NOTE**: Part Numbers 108382 & 108545 do not have an on/off valve; therefore, the pressure indicator gauge and second stage are always active when the cylinder is pressurized*

CAUTION: The dial indicator is for reference only. Use fill system gauge as indicator of fill pressure.

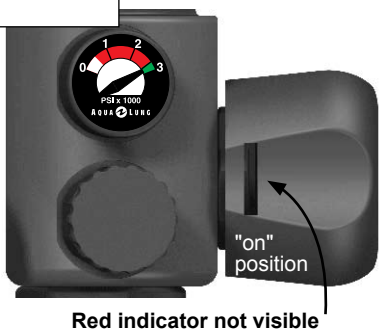
1. Inspect the fill adapter to ensure that the o-ring is present and seated evenly inside its groove and the male fitting is clean and free of any damage to its threads.
2. Fit the male fitting of the fill adapter into the high pressure fill port of the first stage, and turn clockwise only by hand until lightly snug. DO NOT apply a wrench or otherwise overtighten the fill adapter.
3. Loosen the yoke screw of the compressor fill yoke as needed so that the yoke can be placed over the block of the fill adapter.
4. While supporting the SEA with one hand, place the yoke of the compressor fill yoke over the block of the fill adapter to align the inlet fitting flush against the valve o-ring. Tighten the fill yoke screw clockwise into the small dimple on the backside of the fill adapter block only until finger snug.



WARNING: DO NOT attempt to fill the SEA from a compressor or air supply where the regulated pressure exceeds 3,000 PSI / 206 BAR. Doing so may weaken and damage the safety burst plug assembly and/or SEA cylinder.

***NOTE**: The SEA will fill with the valve handwheel in the completely closed position (red indicator ring visible). In this position the pressure indicator (pin or dial) will not register psi. This is not recommended.*

5. While holding the first stage and fill adapter secure, turn the SEA valve handwheel counterclockwise until it is completely open. When the handwheel is in the open position, the red indicator ring is not visible.



Red indicator not visible

6. Ensure that the SEA is supported, and turn the compressor valve *very slowly* until it is slightly open to fill the cylinder with approximately 500 PSI / 34.5 BAR. Turn the fill valve shut and wait 45-60 seconds before proceeding to fill the cylinder any further. Repeat this procedure to fill the cylinder very slowly in small increments of 500 PSI / 34.5 BAR or less, until it is filled to 3,000 PSI / 206 BAR.

***NOTE**: Always fill the SEA as slowly as possible by turning the handwheel of the supply valve slowly to control the rate of fill. Rapid filling will generate heat and will result in an incomplete fill after the cylinder cools. If the cylinder is warm to the touch afterward, the fill rate was too rapid.*

7. To conserve the limited air supply of the SEA, it is strongly recommended that you perform the following pre-issue inspection of the second stage purge while the SEA is connected to the compressor fill yoke and pressurized via the compressor fill adapter:

a. Briefly depress the purge button to ensure that sufficient airflow is provided to clear the second stage.

b. Immediately after releasing the purge button, listen closely to ensure that the second stage does not continue to flow any air.

8. While holding the first stage and fill adapter secure, turn the SEA valve handwheel clockwise until it stops and the red indicator is visible. Turn the compressor fill valve completely closed.

9. Hold the second stage purge button depressed until air flow can no longer be heard from the second stage and the LP hose is depressurized (N/A to PN 108382 & PN 108545).

10. Open the pressure relief screw on the compressor fill yoke to relieve the line pressure.

11. While holding the SEA cylinder supported, turn the yoke screw of the compressor fill yoke counterclockwise to loosen until the compressor fill yoke can be removed from the block of the fill adapter. Return the compressor fill yoke to its storage location.

12. While holding the SEA secure, turn the fill adapter block counterclockwise at the fitting to loosen and remove from the first stage.

13. Thread the fill port plug back into the fill port until fingertight.

14. When charging is complete, remove and store the compressor adapter in a clean area.

Filling the SEA with the MRS-III Mobile Refill Station

The MRS-III is a self-contained Mobile Refill Station with an onboard supply of approved breathing air pressurized up to 4500 psi. The MRS-III is designed to fill up to two (2) Aqua Lung SEA (Survival Egress Air) units simultaneously to the operating pressure of 3000 psi. The following instructions are the same for filling one unit or two (Refer to the MRS III instruction book for more detailed instructions).

1. Verify that both panel-mounted Fill Valves on the MRS-III are closed (clockwise).

2. Open the Valves on the MRS-III Supply Cylinders and verify that the SUPPLY Pressure Gauge on the panel reads between 3000 and 4500 psi.

3. Verify that the REGULATED Pressure Gauge on the MRS-III panel reads 3000 psi.

4. Unscrew the Fill Hose Connector from its mounting point and install the Fill Port Plug in its place for safekeeping pending re-installation. Inspect the Fill Hose Connector to ensure that the o-ring is present and seated evenly inside its groove and the male fitting is clean and free of any damage to its threads.

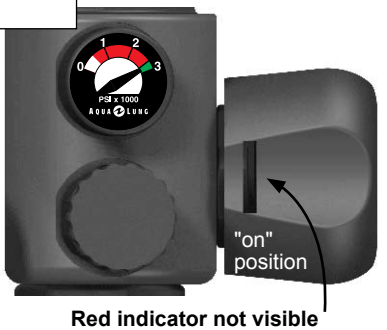
5. Place the SEA in the blast tube.

6. Install the MRS-III Fill Hose Connector into the SEA Fill Port by rotating the knob clockwise until the o-ring is fully seated. Hand tighten only. DO NOT USE A WRENCH OR PLIERS TO TIGHTEN.

☞ ***NOTE**: The SEA will fill with the valve handwheel in the completely closed position (red indicator ring visible). In this position the pressure indicator (pin or dial) will not register psi. This is not recommended.*

⚠ **CAUTION: The dial indicator is for reference only. Use fill system gauge as indicator of fill pressure.**

7. Turn the SEA valve handwheel counterclockwise until it is completely open. When the handwheel is in the open position, the red indicator ring is not visible.



Red indicator not visible

8. Slowly open the MRS-III panel-mounted Fill Valve (counterclockwise) that corresponds to the Fill Hose being used.

9. Slowly fill the SEA at a rate not to exceed 500 psi per minute, to the maximum of 3000 psi. Make sure the pressure indicator (pin or dial) shows that the cylinder is filling properly.

☞ ***NOTE**: If the SEA cylinder becomes excessively warm to the touch while filling, allow additional filling time for the unit to cool before removing the SEA unit.*

10. To conserve the limited air supply of the SEA, it is strongly recommended that you perform the following pre-issue inspection of the second stage purge while the SEA is connected to the MRS-III fill hose connector and pressurized via the MRS-III:

a. Briefly depress the purge button to ensure that sufficient airflow is provided to clear the second stage.

b. Immediately after releasing the purge button, listen closely to ensure that the second stage does not continue to flow any air.

11. When the SEA has cooled and is full, turn the SEA valve handwheel clockwise until it stops and the red indicator is visible. Close the MRS-III panel-mounted fill valve.

12. Hold the second stage purge button depressed until airflow can no longer be heard from the second stage and the LP hose is depressurized.

13. Open the bleeder valve knob on the MRS-III fill hose connector and vent the pressure from the fill hose.

14. Disconnect the MRS-III fill hose connector from the SEA by rotating the connector knob counterclockwise.

15. Replace the fill port plug into the fill port of the SEA unit and hand tighten.

16. When all filling operations are complete, close the valves on the MRS-III supply cylinders. Firmly grasp one of the MRS-III fill hose connectors, point in a safe direction, and bleed any remaining pressure from the system by slowly opening the corresponding panel-mounted fill valve for that hose.

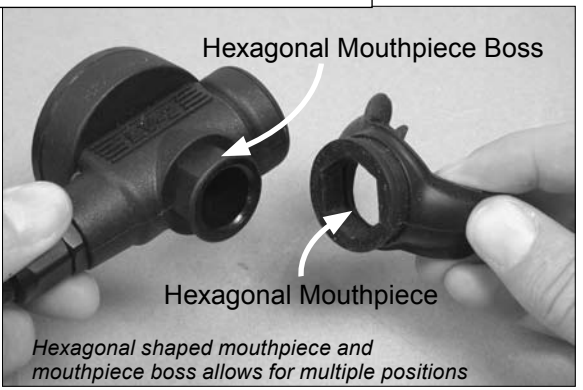
17. Close both panel-mounted fill valves and both bleeder valve knobs on the MRS-III.

18. Attach the fill connectors to the provided mounting brackets, close and securely latch the MRS-III cover.

Adjusting the LV2 Mouthpiece Position

The LV2 second stage incorporates a unique feature that enables the user to adjust orientation of the second stage body in relation to the mouthpiece. This feature keeps the LV2 hose closer to the body and allows for more flexibility in various bottle-mounting configurations.

The mouthpiece-to-body default position is horizontal which allows hose to route either to the right or left of the LV2 Regulator second stage. The mouthpiece boss on the body is hexagonally shaped, which allows the mouthpiece to rotate to six different positions.



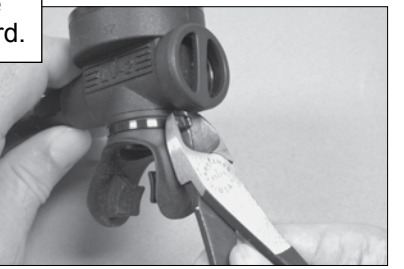
Hexagonal shaped mouthpiece and mouthpiece boss allows for multiple positions

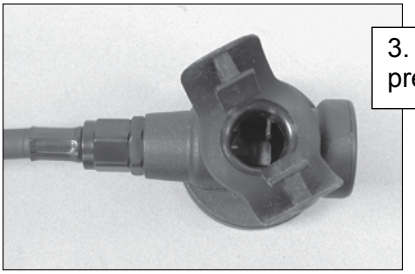
WARNING: The mouthpiece clamp (16) must always be installed before returning regulator to service. Failure to install the clamp will result in mouthpiece separating from regulator body during deployment of regulator.

Changing Position of mouthpiece

1. Mount SEA bottle in user preferred position.

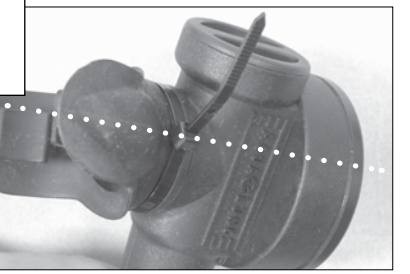
2. Using side cutters, remove the mouthpiece clamp (16) and discard.





3. Rotate mouthpiece to preferred position.

4. Install a new mouthpiece clamp (16) with the clamp tab positioned in-line with the center of the right bite-tab on the mouthpiece. Since the LV2 mouthpiece is of a lower profile design than standard Scuba-style mouthpieces the clamp tab should be orientated in this manner so that clamp tab does not interfere with the users lips.



Pre-Issue Checklist

Before each use, the unit must be given a thorough visual inspection and functional test by a qualified technician. NEVER use an SEA which shows signs of damage, leakage, or substandard performance until it has received inspection and service from a qualified technician.

> ☞ ***NOTE**: Pre-Issue checkout procedures are identical for the SEA MK and LV2, regardless of which second stage is used.*

1. Carefully inspect the low pressure hose to ensure it is securely connected into its respective port on the first stage and onto the second stage. Inspect the length of the hose to ensure that it is not blistered, cut, or otherwise damaged. Inspect the hose fittings for any signs of corrosion.
2. Visually inspect the entire system for any external damage, such as dents, gouges, or severe external corrosion.
3. While the SEA valve is completely shut and the system is depressurized, inspect the pressure indicator assembly to ensure that it is securely fastened to the first stage. Closely examine the pressure indicator to ensure that it reads zero.

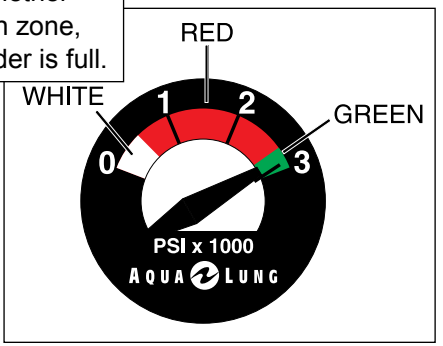
> ⚠ **CAUTION: If the pressure indicator does not read zero when the valve is shut and the system is depressurized, DO NOT attempt to use the system until it has received inspection and service from a qualified technician.**

> ☞ ***NOTE**: Part Number 108382 and 108485 do not have an on/off valve; therefore, the pressure indicator gauge and second stage are always active when the cylinder is pressurized.*

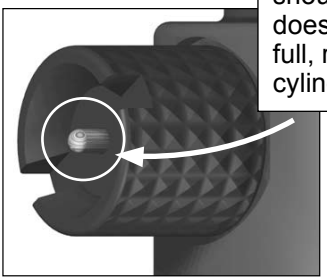
> ⚠ **CAUTION: DO NOT attempt to open the SEA valve without first checking to ensure that the LP hose and pressure indicator assembly are securely fastened to the first stage.**

4. Turn the SEA valve handwheel counterclockwise until it is completely open. In the open position, the red indicator ring is not visible in the handwheel.

5. Closely examine the pressure indicator dial to determine whether the needle is within the green zone, indicating that the SEA cylinder is full.



6. If equipped with a pin indicator, the pin should be exposed. If the pressure indicator does not indicate that the cylinder is completely full, repeat the filling procedure using a supply cylinder that is filled to 3,000 PSI / 206 BAR.



7. Remove the protective retainer cover, immerse the SEA in water to check for any signs of freeflow from the second stage, or leakage from the hose, pressure gauge, safety disc assembly, first stage, or cylinder neck. If leakage is found, do not attempt to use the SEA until it has received service from a qualified technician. When complete, remove the water from the SEA 1st & 2nd stages and reinstall the retainer cover.

☞ ***NOTE**: If the second stage purge was checked during the filling procedure, it is not necessary to repeat steps 7 & 8.*

8. Briefly depress the purge button to ensure that sufficient airflow is provided to clear the second stage of water (N/A to PN 108382 & PN 108545).

9. Immediately after releasing the purge button, listen closely to ensure that the second stage does not continue to allow any air flow.

10. Turn the valve handwheel clockwise until it is completely closed. In the closed position, the red indicator ring is visible in the handwheel.

Provided that these pre-issue inspection requirements have all been met, the SEA is now ready for use.

Pre-Flight Inspection

The pre-flight inspection shall be performed on the SEA prior to each flight by the air crew member to whom the unit is assigned. Pre-flight procedures are as follows:

WARNING: *Strict compliance of pre-flight and post-flight inspections shall be adhered to by all air crew members utilizing the SEA. Any signs of discrepancies shall be reported immediately to maintenance personnel.*

1. With the system off, visually inspect the SEA for signs of damage. Inspect front cover, exhaust cover and fittings for tightness. Inspect for tamper dot (if command uses tamper dot) on front cover. Inspect hose for cuts and blistering. Inspect for contamination, dirt and signs of corrosion.

CAUTION: *Do not press the purge button when the SEA is on. Purging of the SEA will deplete the pressure below the "GREEN ZONE" and it will have to be topped off by maintenance personnel*

2. Turn the SEA "ON" by rotating the on/off knob to the left (counter-clockwise), the red indicator ring shall not be seen through the elongated holes on the knob. Ensure that the gauge reads in the "GREEN ZONE". If the gauge does not read in the "GREEN ZONE" report discrepancy to maintenance personnel.

Post-Flight Inspection

1. Upon completion of flight, turn handwheel off (clockwise), so that red indicator ring is visible through the elongated holes on the handwheel. Depress the purge button to relieve pressure in hose and second stage. Check SEA for signs of damage and contamination. Report discrepancies to maintenance personnel.

Care & Maintenance

It is important to provide the proper preventative maintenance in order to ensure the best possible performance and reliability of the SEA. The following maintenance procedures should be performed routinely after each use of the equipment.

1. After each in-water training session, the SEA must be cleaned, inspected, prepared for the next use or for storage.

2. As soon as possible after training, the SEA should be soaked thoroughly for at least one hour in warm (not over 120ºF / 49ºC) tap water to loosen and dissolve salt (if used in salt water) and mineral deposits. Before soaking, remove the protective retainer cover and turn the valve to the "ON" position to pressurize the system. This will best prevent the entrance of moisture into the system through the second stage.

CAUTION: If the SEA cylinder does not contain air, it is important to ensure that the valve is completely turned to the "OFF" position, and the second stage purge button is not depressed while the system is submerged or wet. Moisture may otherwise be allowed to enter the valves and the cylinder, which will require that the system be returned to a qualified technician for inspection and service.

3. After the system has been properly soaked, it is important to rinse the first stage, the second stage mouthpiece, and the openings in the second stage front cover with a pressurized stream of water. This will remove the salt and mineral deposits that were loosened during soaking.

4. When it has been properly soaked and rinsed, wipe the system as dry as possible with a clean towel and gently shake the first and second stage to dislodge any water inside them. If possible, use clean low pressure air to blow out of retainer cap prior to installing the rubber retainer cover. Re-install the rubber retainer cover when the unit is completely dry.

5. Check to ensure that the SEA valve is turned to the "OFF" position, and depress the purge button of the second stage to ensure that the system is completely depressurized before storing or transporting.

6. Due to the possibility of fire and exposure to extreme heat, the SEA must be stored either completely full or completely empty. If the system is exposed to fire while partially filled, the cylinder wall may rupture before the internal pressure becomes great enough to burst the safety relief disc. For this reason, Aqua Lung recommends that the cylinder be completely emptied and the valves kept shut to prevent the entrance of moisture before storing the system for an indefinite period.

WARNING: DO NOT store the SEA partially filled. Doing so may prevent the safety relief assembly from functioning properly in the event of fire or exposure to extreme heat. This may cause the cylinder to rupture or explode, possibly resulting in severe injury or death.

7. Store the SEA completely dry, in a clean equipment box or sealed inside a plastic bag. When possible, avoid storing it where it may be exposed to extreme heat or an electric motor, which produces ozone. Prolonged exposure to extreme heat, ozone, chlorine, and ultraviolet rays can cause premature degradation of rubber parts and components, and must be prevented.

8. When transporting the SEA, take the necessary precautions to ensure that it is surrounded by a protective cushion to prevent undue shock or impact.

9. Do not use any type of solvent or petroleum based substances to clean or lubricate any part of the regulator. Do not expose the regulator to aerosol spray, as some aerosol propellants attack or degrade rubber and plastic.

Inspection & Service

1. It cannot be assumed that the SEA is in good working order on the basis that it has received little use since it was last serviced. Remember that prolonged or improper storage can still result in internal corrosion and/or deterioration of o-ring seals and valve springs.

2. It is imperative that you obtain factory prescribed service for your SEA at least once every two years from a qualified technician, including a visual inspection of the cylinder, and complete overhaul of the first and second stage regulators. Your SEA may require this service more frequently, depending on the amount of use it receives and the environmental conditions it is used in.

3. If the SEA is used for training purposes in saltwater, chlorinated, or silted fresh water, it will require complete overhaul and factory prescribed service every three to six months, or whenever it is suspected that moisture has entered the system. Use in chlorinated swimming pool water will accelerate the deterioration of most rubber components, and require more frequent service than in other typical conditions.

4. DO NOT attempt to perform any disassembly or service of your SEA. Doing so may cause the system to dangerously malfunction. All service must be performed by a qualified technician.

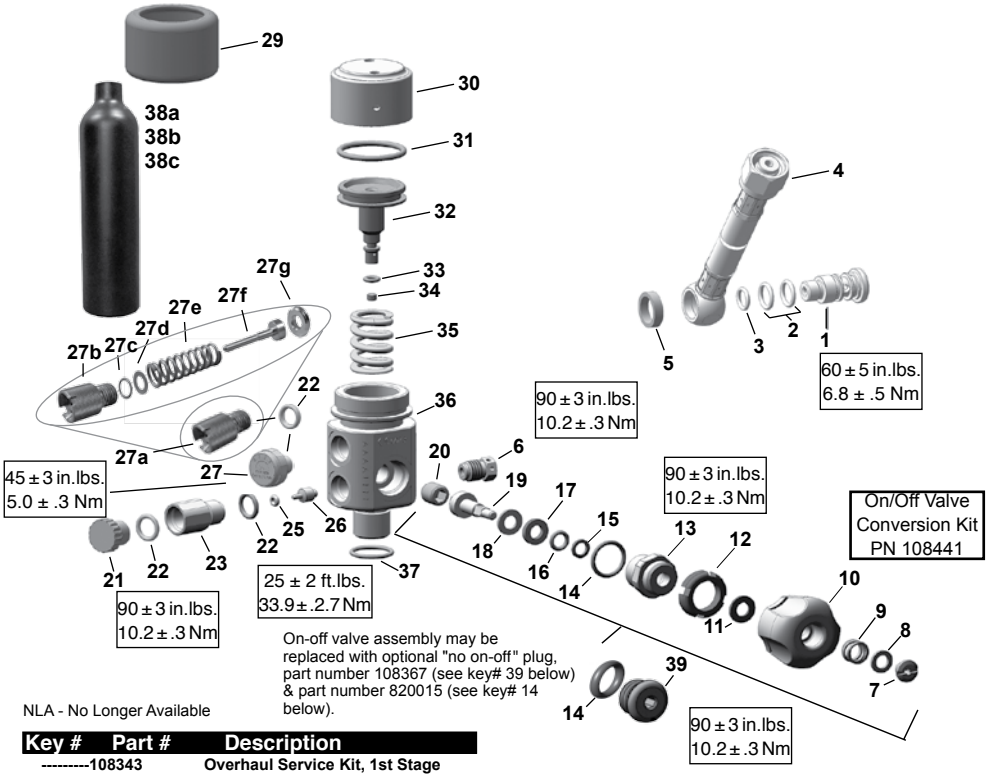
WARNING: Do not attempt to loosen or remove the first stage hose fitting, gauge or safety burst plug under any circumstances. Doing so could result in a dangerous malfunction of the SEA, which could result in serious injury or death.

OBTAIN FACTORY PRESCRIBED SERVICE FOR YOUR SEA AT LEAST ONCE EVERY TWO YEARS. YOUR PERSONAL SAFETY AND THE MECHANICAL INTEGRITY OF YOUR SEA DEPEND ON IT.

Technical Specifications

Cylinder Volume	*2.0 cf / 42.5 liters
Cylinder Material	Aluminum
Cylinder Length with Regulator	*10.5 in / 26.67 cm
Rated Cylinder Pressure	3,000 PSI / 206 BAR
Low Pressure Hose Length	*20 in / 50.8 cm
First stage Hose Connection	360 degree swivel
Regulator First Stage	Unbalanced Piston
Regulator Second Stage	MK or LV2
Pressure Gauge	Pin-type, integrated with First Stage or dial gauge
Over Pressure Relief	Safety Burst Disc Assembly First Stage Mounted
System Weight	Approximately 2.5 lbs / 1.36 kg
Buoyancy Full	Approximately -2.0 lbs / -.9 kg
Duration of Air Supply	**Approximately 21 breaths at 21 ft / 6.4 m.
*Based on pn 108330, SEA with 2.0 cu. ft. bottle **Based on an average breath volume of 1.5 liters at a breathing rate of 10.5 bpm, with a starting supply pressure of 3,000 PSI / 206 BAR.	

S.E.A. First Stage with Cylinder Assembly



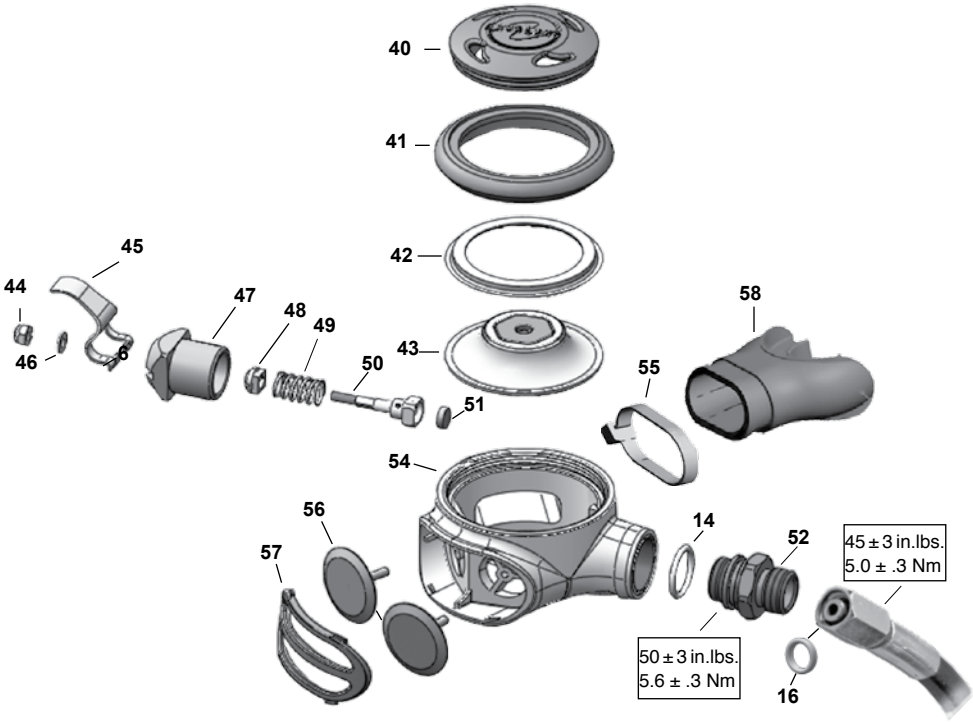
NLA - No Longer Available

Key #	Part #	Description
	---------108343	**Overhaul Service Kit, 1st Stage**
	---------108311	First Stage Spare
	---------108469	First Stage, Spare, USCG/CBP
1	--------108305	Port Plug, Swivel, Black
	---------108333	Port Plug, Swivel, Chrome
2	***--------820312P***	***O-ring (10 pk)***
3	***--------820311P***	***O-ring (10 pk)***
4	--------108392	Hose Assy LV2, 27" Black
	---------108391	Hose Assy LV2, 20" Black
	--------100625	Hose Assy MK, 27" Black
	--------102835	Hose Assy MK, 20" Black
5	--------108306	Spacer, Black
	---------108334	Spacer, Chrome
6	***--------054201***	***Burst plug***
7	--------108304	Retaining Nut, Black
	---------108314	Retaining Nut, Silver (NLA)
8	--------108329	Washer, Handwheel
9	--------108316	Spring, Handwheel
10	-------108313	Handwheel
11	-------108326	Washer
12	-------108317	On-off indicator ring
13	-------108318	Bonnet
14	***-------820015P***	***O-ring (10 pk)***
15	***-------828009***	***Backup ring***
16	***-------820010P***	***O-ring (25 pk)***
17	-------108328	Spacer, metal
18	***-------108327***	***Washer, white Teflon®***
19	-------108319	Stem
20	***-------108322***	***Seat, Disc & Retainer Assy***
21	-------108307	Cap, Fill port

Key #	Part #	Description
22	***-------820319P***	***O-ring (10 pk)***
23	-------108308	Fill port
25	***-------820304P***	***O-ring (10 pk)***
26	-------108309	Pin, Fill Port (Check valve)
27	-------102810	Gauge, Dial, Low Profile, Black
27a	------108346	Indicator Assy, Pressure, Pin Style
27b	------108347	Body, Pressure Indicator
27c	***------820304P***	***O-ring (10pk)***
27d	------845034	Washer
27e	------100688	Spring
27f	------100613	Plunger
27g	------100607	Retainer
29	-------108302	Cover, Retainer
30	-------108303	Cap, Retainer
31	***-------820062P***	***O-ring (10 pk)***
32	-------106769	Piston
33	***-------820007P***	***O-ring (20 pk)***
34	***-------106726***	***HP Seat, Piston***
35	-------106771	Spring, Main
36	-------108312	Body, First Stage
37	***-------820316P***	***O-ring(10 pk)***
38a	------079105	Cylinder, 1.5 cu.ft. Alum, Black
38b	------079120	Cylinder, 2.0 cu.ft. Alum, Black
38c	------079125	Cylinder, 2.5 cu.ft. Alum, Black
39	-------108367	Plug, Blank, 5/8" Thread, Black

Part numbers in ***BOLD ITALICS*** indicate standard overhaul replacement part.

MK Second Stage Exploded Parts



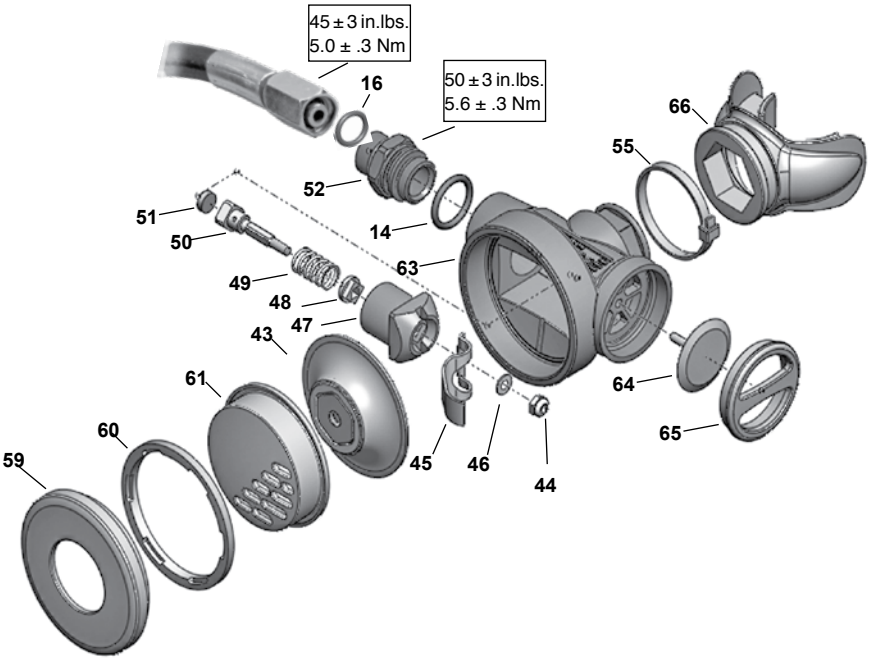
Key #	Part #	Description
	---------108344	**Overhaul Parts Kit, 2nd Stage MK/LV2**
	---------108315	MK Second Stage Assy, Spare
	---------108468	MK Second StageAssy., Spare USCG/CBP
14	***-------820015P***	***O-ring (10 pk)***
16	***-------820010P***	***O-ring (25 pk)***
40	-------100904	Front Cover
41	-------100906	Ring, Retaining, Threaded
42	-------100909	Ring, Cover Support
43	-------100181	Diaphragm
44	***-------102510***	***Locknut***
45	-------100923	Lever
46	-------104129	Washer
47	-------100945	Valve Body
48	***-------104134***	***Poppet Bearing***
49	-------104127	Spring
50	-------104122	Poppet
51	***-------106738***	***Disc Seat***
52	-------108338	Inlet Fitting
54	-------100905	Box Bottom, Black
55	***-------104913***	***Clamp***
56	***-------100922***	***Exhaust Valve***
57	-------100907	Exhaust Cover
58	-------105831	Mouthpiece

Parts Not Shown

n/s-------100653	Mouthpiece Cover, SEA
n/s-------102835	Hose Assy MK, 20" Black
n/s-------100625	Hose Assy MK, 27" Black
n/s-------108414	USCG Hard Cover (replaces key # 40 & 41)

Part numbers in ***BOLD ITALICS*** indicate standard overhaul replacement part.

LV2 Second Stage



Key #	Part #	Description
---------	***108344***	***Overhaul Parts Kit. 2nd Stage, MK/LV2***
---------	108402	LV2 Second Stage Assy., Spare

14	***820015P***	***O-ring (10 pk)***
16	***820010P***	***O-ring (25 pk)***
43	100181	Diaphragm
44	***102510***	***Locknut***
45	100923	Lever
46	104129	Washer
47	100945	Valve Body
48	***104134***	***Poppet Bearing***
49	104127	Spring
50	104122	Poppet
51	***106738***	***LP Seat***
52	108438	Inlet Fitting, Black
59	100652	Cover, Hard, Purge
60	100119	Retaining Ring
61	100104	Front Cover
63	108374	Box Bottom
55	***104913***	***Clamp***
64	***100122***	***Exhaust Valve, 1.0"***
65	108371	Cap Exhaust Valve
66	108373	Mouthpiece, LV2
Parts not shown		
n/s	*108391*	*Hose Assy, LV2, 20" Black*
n/s	*108392*	*Hose Assy, LV2, 27" Black*
n/s	*108453*	*Mouthpiece Cover, LV2*

Part numbers in ***BOLD ITALICS*** indicate standard overhaul replacement part.

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Survival Egress Air (SEA) User's Manual

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